

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Wood River Sulfuric Acid Release - Removal Polrep



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region V

Subject: POLREP #3
Progress
Wood River Sulfuric Acid Release

Wood River, IL, IL
Latitude: 38.8518045 Longitude: -90.0991173

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From: Adam Vrabec, Federal OSC
Date: 6/7/2021
Reporting Period: 06/06/2021 to 06/07/2021

1. Introduction

1.1 Background

Site Number:	Contract Number:
D.O. Number:	Action Memo Date:
Response Authority: CERCLA	Response Type: Emergency
Response Lead: PRP	Incident Category: Removal Action
NPL Status: Non NPL	Operable Unit:
Mobilization Date: 6/3/2021	Start Date: 6/3/2021
Demob Date:	Completion Date:
CERCLIS ID:	RCRIS ID:
ERNS No.:	State Notification:
FPN#:	Reimbursable Account #:

1.1.1 Incident Category

Release of spent sulfuric acid from 4 railcars staged on a railroad siding. The release occurred on June 2, 2021 and involves four tank cars of spent alkylation sulfuric acid. The release occurred on a set of railroad tracks operated by Norfolk Southern. Local fire departments continue to spray water on all four railcars to control the release of spent sulfuric acid venting sulfur dioxide.

Based on a review of the safety data sheet for spent alkylation sulfuric acid, the following contaminants of interest were identified as for Site-specific COCs of: sulfuric acid and sulfur dioxide (SO₂).

1.1.2 Site Description

The site is located approximately 1/2 mile to the North of 170 Rand Avenue, Wood River, IL 62048, in

Madison County. GPS locations is 38.8512892197, -90.09852534435.

The release occurred on a set of railroad tracks operated by Norfolk Southern. The area to the North and East consist mainly of residential properties. To the West and South consist of commercial properties.

1.1.2.1 Location

See site description above.

1.1.2.2 Description of Threat

On June 2, 2021 a release of Spent Sulfuric Acid occurred from the pressure relief device (PRD) resulting in the chemical migrating via air downstream and affecting several commercial businesses to the Northeast. The residential neighborhood to the East was also affected due migrating vapors.

On June 3, 2021 it was discovered that three additional railcars were experiencing high pressures resulting the PRD's going off. A shelter in place order was issued for the neighborhood to the East.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

- IEPA, USEPA, and START responded on scene to oversee response activities and assessing the situation on the morning of 06/04/2021

- Norfolk Southern had their emergency response and environmental representatives and contractors on-site, and Phillips 66 had their emergency response contractors on site

- Norfolk Southern and Phillips 66 contractors were going down range to assess the railcars that were causing the release and providing air monitoring in and around the incident site

- A shower curtain of water was being applied to the leaking tank cars in attempt to knock down/ suppress spent sulfuric acid vapors.

- Initial NRC report described one railcar leaking, but by the morning of 06/03/2021, three additional railcars were also leaking.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Unified Command has been established consisting of Norfolk & Southern, Phillips 66, U.S. EPA, and Illinois Environmental Protection Agency (IEPA) Wood River Fire Department and Madison County EMA.

2.1.2 Response Actions to Date

- 24/7 air monitoring around perimeter of incident location.

- 24/7 water curtain being applied to leaking cars.

- One scrubber unit brought in to attempt to relieve pressure of railcar #4.

- Shelter in place order has been lifted.

- Periodic pH monitoring of run-off water.

- Approximately 6 million gallons of water have been used by 2400 hours - 06/05/2021 to suppress vapors.

- Norfolk Southern Railway (NS) on-Site management is supported by their contractor for real-time air monitoring activities, results, and observations from real-time air monitoring performed in relation to a release of spent sulfuric acid resulting in venting sulfur dioxide.

- Six stationary remotely monitored real-time air monitoring data from six monitoring locations around the perimeter of the site and maintained the instruments at each location throughout the monitoring period. Also, roving teams manually record real-time air monitoring data using hand-held instruments throughout the surrounding community and at the Site perimeter.

- Real-time air monitoring is used primarily as a screening tool to quickly indicate the presence of elevated airborne concentrations of Site-specific chemical of interest for the purpose of alerting Site personnel, and members of the public to potentially changing conditions in the work environment.

Real-time air monitoring activities and strategies were performed in accordance with the Site-specific Air Monitoring Plan (AMP) was developed and reviewed by a certified industrial hygienist (CIH).

- Honeywell RAE Systems AreaRAE monitors (AreaRAE) equipped with an electrochemical sensor specific for SO₂. Each stationary air monitoring instrument was deployed approximately 4.5 feet above the ground to represent the air quality within the typical breathing zone of personnel in the area. Using radio telemetry, readings for each stationary air monitoring instrument were transmitted to a host computer for simultaneous monitoring from a central location.

- During this monitoring period the stationary air monitoring system recorded over 55,167 real-time air monitoring readings for SO₂. From the initial deployment on June 3, 2021 through the end of this current monitoring period the stationary air monitoring system has documented over 55,258 real-time air monitoring readings for SO₂.

Update for 06/05/2021 – 06/06/21 (1500 hours)

- On 06/05/2021, both morning and afternoon operations continued use of water curtain suppression control of vapors. 24-hour, round-the clock perimeter air monitoring was performed by START, Phillips 66 and Norfolk & Southern Railroad using the direct read instruments of AreaRAE's, MultiRAE's in conjunction with SPM-Flex instruments occasionally performing spot checks with color-metric tubes. Note: START is collecting real-time data with four AreaRAE's and three SPM-Flex instruments all connected to Viper streaming data to the EPA Cloud. START instruments are deployed as tasked by OSC Vrabec to the far eastern side of the site placed along South 6th Street for residential surveillance purpose with one AreaRAE (Air Monitoring Station #5) in an upwind location near the intersection of Rand Avenue and Delmar Street.

After the 1800 hours daily operations meeting on 06/05/2021, Unified Command tactic decisions were made to attempt the capture the vapors due to decreasing pressure from the four railcars . Also, continuous air monitoring and maintaining a water curtain control of vapors emanating from the four railcars as additional protective measures.

Early morning hours of 06/06/2021

- At approximately 0100 hours a crude “bagged” shroud with affixed extraction piping placed covered over the dome of each railcar with connections to a vacuum truck containing a slurry of soda ash. Vapors were drawn from the bag collection device and into the vacuum truck slurry mixture. Starting at 0345 hours the bagged system was fully operational on all four venting railcars
- At approximately 0445 hours, a slurry of soda ash was also spray applied underneath and on both sides of the venting railcars.
- At 0700 hours, the tactics that were deployed in the early morning hours resulted in no new shelter in place or road closures unlike the previous two days before in the early morning hours.
- At approximately 1145 hours, the water curtain operations was suspended to test the effectiveness of bagged vapor control tactic.
- As of 1700 hours the water curtain remains off and no elevated readings of SO₂ are observed on air monitoring equipment, and if observed, they are not sustained readings.

As of 1800 hours on 06/06/2021

The bagged vapor control system installed on all four tank cars still continue to operate until no vapors are releasing from the railcars. If water curtain suppression is needed, the water system will resume tank car spray suppression of vapors.

- USEPA, GHD, CTEH, Phillip 66, Fire departments continue to do 24/7 air monitoring around perimeter of incident location.
- Unified Command continues to operate 24/7

Update for 06/06/2021 – 1800 hours on 06/07/2021

- No elevated readings were observed by the site surveillance air monitoring systems.
- At 1019 hours railcar #3 successfully completed the planned replacement of all fittings. At this time, the pressure is holding.
- At 1419 hours railcar #2 successfully completed replacement of all fittings and the pressure is holding.
- Shroud collection and control of vapors used in conjunction with scrubbers on Railcars #1 and 4 are operating nominally.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

Notice of Federal Interest in a threat of Hazardous Release Incident issued to both Phillips 66 and Norfolk & Southern Railway Company.

2.1.4 Progress Metrics

As of 1800 hours on 06/07/2021

- The bagged vapor control system installed on two of the four tank cars continue nominal capture and control of vapors.
- Pulling vapors into soda slurry line vacuum trucks maintains effective control of SO₂ emissions remain in operation.
- Operations to routinely record pressure checks on each railcar is conducted in 90-minute intervals.
- Operations tactics towards PRD replacement on two of the four railcars is ongoing by the railroad contractors.
- If necessary, the water curtain system can resume to full operations.
- USEPA, GHD, CTEH, Phillip 66, Fire departments continue to do 24/7 air monitoring around perimeter of incident location.
- Unified Command continues to operate 24/7.
- Continue monitoring pH levels of vapor suppression water run-off.

<i>Waste Stream</i>	<i>Medium</i>	<i>Quantity</i>	<i>Manifest #</i>	<i>Treatment</i>	<i>Disposal</i>

2.2 Planning Section

2.2.1 Anticipated Activities

As of 1800 hours on 06/07/2021

- The bagged vapor control system installed on two of the four tank cars continue nominal capture and control of vapors.
- Pulling vapors into soda slurry line vacuum trucks maintains effective control of SO₂ emissions remain in operation.
- Operations to routinely record pressure checks on each railcar is conducted in 90-minute intervals.
- Operations tactics towards PRD replacement on two of the four railcars is ongoing by the railroad contractors.
- If necessary, the water curtain system can resume to full operations.
- USEPA, GHD, CTEH, Phillip 66, Fire departments continue to do 24/7 air monitoring around perimeter of incident location.
- Unified Command continues to operate 24/7.
- Continue monitoring pH levels of vapor suppression water run-off.

2.2.1.1 Planned Response Activities

Same as 2.2.1 (above).

2.2.1.2 Next Steps

Make plans to arrange final steps of vapor emissions shutdown and relocate all railcars back into the Phillips 66 refinery.

2.2.2 Issues

As night falls, ambient air temperatures drop resulting in air inversions creating elevated SO₂ readings throughout the air monitoring network resulting in shelter in place orders and road closures. With daybreak and rising ambient temperatures, readings significantly dropped off, or returned to zero instrument readings. This occurred during the mornings of 06/04/2021 and 06/05/2021.

Inclement weather may require START to pull all AreaRAE's and SPM-Flex instruments from field deployment. Rain is expected on the afternoon of Sunday, June 7, 2021.

Inclement weather may require stand-down to field operations in the event of lightning within a 7-mile radius.

2.3 Logistics Section

No information available at this time.

2.4 Finance Section

2.4.1 Narrative

The START Task Order Line Item Number (TOLIN) was issued for \$10,000 on 06/03/2021. Incremental financing is expected on 06/08/2021.

2.5 Other Command Staff

2.5.1 Safety Officer

Rotating Unified Command

2.5.2 Liaison Officer

Rotating Unified Command

2.5.3 Information Officer

Rotating Unified Command

3. Participating Entities

3.1 Unified Command

US EPA is participating in Unified Command structure

3.2 Cooperating Agencies

USEPA, IEPA, Norfolk Southern, Phillips 66, Madison County EMA, Wood River Fire Department.

4. Personnel On Site

USEPA, IEPA, Norfolk Southern, Phillips 66, Madison County EMA, Wood River Fire Department.

5. Definition of Terms

No information available at this time.

6. Additional sources of information

6.1 Internet location of additional information/report

https://response.epa.gov/site/sitrep_profile.aspx?site_id=15228

6.2 Reporting Schedule

7. Situational Reference Materials

No information available at this time.





